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ICC-ES Evaluation Report

ESR-2528

Reissued April 2022

Revised July 2022

This report is subject to renewal April 2023.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 32 16—Concrete Roof Tiles

REPORT HOLDER:

SANDSTONE INC., dba STONEWORTH BUILDING PRODUCTS

EVALUATION SUBJECT:

STONEWORTH BUILDING PRODUCTS FLAT AND VENETIAN CONCRETE ROOF TILES

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Durability
- Fire classification
- Wind uplift resistance

1.2 Evaluation to the following green code:

- 2019 California Green Building Standards Code (CALGreen), Title 24, Part 11

Attributes verified:

See Section 3.1

2.0 USES

The Flat and Venetian concrete roof tiles are used as Class A roof coverings in accordance with the exception to Section 1505.2 of the IBC and Section R902.1 of the IRC.

3.0 DESCRIPTION

The Flat and Venetian tiles are manufactured from portland cement, sand, water, coloring agents and admixture, and comply with ASTM C1492. Mineral coloring oxides are mixed with the portland cement to produce color through the entire tile. Both tiles are 16¹/₂ inches (419 mm) long and 13 inches (330 mm) wide, and have longitudinal edges that form interlocking ribs and grooves designed to restrict lateral movement and provide a weather check.

The attributes of the roof tiles have been verified as conforming to the provisions of CALGreen Section A5.406.1.2 for reduced maintenance. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.1 Flat Tile:

The Flat tiles are approximately 1¹/₂ inches (38 mm) high, and are classified as Type II tiles in accordance with ASTM C1492. Two nail holes are provided at the top portion of each tile, with protruding head lugs on the underside to provide mechanical attachment over battens. The tiles are installed with a head lap of 3 inches (76 mm) and a side lap of 1.35 inches (34 mm), and have an installed weight of 10¹/₂ psf (51 kg/m²). See Figure 1 for tile profile and dimensions with matching ridge, rake and hip units.

3.2 Venetian Tile:

The Venetian tiles are approximately 3 inches (76 mm) high, and are classified as Type I tiles in accordance with ASTM C1492. Two nail holes are provided at the top portion of each tile, with protruding head lugs on the underside to provide mechanical attachment over battens. The tiles are installed with a head lap of 3 inches (76 mm) and a side lap of 1.27 inches (32 mm), and have an installed weight of 9¹/₂ psf (46 kg/m²). See Figure 2 for tile profile and dimensions with matching ridge, rake and hip units.

4.0 INSTALLATION

4.1 General:

Except as otherwise noted in this report, the tiles must be installed in accordance with the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, published by the Tile Roofing Institute, Inc., and the Western States Roofing Contractors Association (herein referred to as the TRI/WSRCA installation manual), dated March 2010. This report and the current TRI/WSRCA installation manual must be available at the jobsite at all times during installation.

4.2 Adhesively Attached Systems:

The Flat and Venetian concrete roof tiles may be installed with roof tile adhesives that are described in a current ICC-

ES evaluation report for use in concrete roof tile applications. Installation of tiles using these adhesively attached systems must be in accordance with the adhesive manufacturer's ICC-ES evaluation report.

4.3 Roof Slope Limitations:

Tiles must be installed on roof slopes of between 2¹/₂:12 (21 percent) and 21:12 (175 percent).

4.4 Underlayment:

For adhesively attached systems, underlayment must be in accordance with the adhesive manufacturer's ICC-ES evaluation report.

4.5 Fire Classification:

4.5.1 2018, 2015, 2012 and 2009 IBC and IRC: When installed in accordance with this report, the Flat and Venetian concrete roof tiles are Class A roof coverings in accordance with exception 2 to the IBC Section 1505.2 and IRC R902.1.

4.5.2 2006 IBC and IRC: When installed in accordance with this report, the Flat and Venetian concrete roof tiles are Class A roof coverings in accordance with the exception to IBC Section 1505.2 and IRC Section R902.1.

4.6 Wind Resistance:

4.6.1 2018 IBC: For maximum basic design wind speeds of 130 mph (209 km/h) or less and mean roof heights of 60 feet (18.3 m), tiles must be installed in accordance with the perspective parameters of IBC table 1507.3.7.

4.6.2 2018 IRC, 2015 IBC, 2015 IRC and 2012 IBC: For ultimate design windspeeds of 130 mph (209 km/h) or less and mean roof heights of 60 feet (18.3 m) for the IBC and mean roof heights of 40 ft (12.2m) for the IRC, tiles must be installed in accordance with the perspective parameters of IBC table 1507.3.7 or IRC Section R905.3.7.

4.6.3 2012 IRC, 2009 IBC, 2009 IRC, 2006 IBC and 2006 IRC: For maximum basic wind speed of 100 mph (209 km/h) or less and mean roof heights of 60 feet (18.3 m) for the IBC and mean roof heights of 40 ft (12.2m) for the IRC, tiles must be installed in accordance with the perspective parameters of IBC table 1507.3.7 or IRC Section R905.3.7.

4.7 Adhesively Attached Systems:

Flat and Venetian Flat and Venetian concrete roof tiles may be installed with a roof tile adhesive that is listed in a current ICC-ES evaluation report for use in concrete roof tile applications. Installation of tiles using the tile adhesive must be in accordance with the adhesive manufacturer's ICC-ES evaluation report

4.8 Reroofing Applications:

The tiles may be installed over existing roofs, provided the requirements of 2018 and 2015 IBC Section 1511 (2012, 2009 and 2006 IBC Section 1510) or 2018 and 2015 IRC Section R908 (2012, 2009 and 2006 IRC Section R907), as applicable, are met. The roof classification is as noted in Section 4.5.

5.0 CONDITIONS OF USE

The Flat and Venetian concrete roof tiles described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The tiles must be manufactured, identified and installed in accordance with this report, the applicable code, and the TRI/WSRCA installation manual, dated March 2010. The instructions within this report govern if there are any conflicts between the installation manual and this report.

5.2 The roof sheathing and roof framing system must be designed for the appropriate loads determined in accordance with the applicable code, subject to the approval of the code official.

6.0 EVIDENCE SUBMITTED

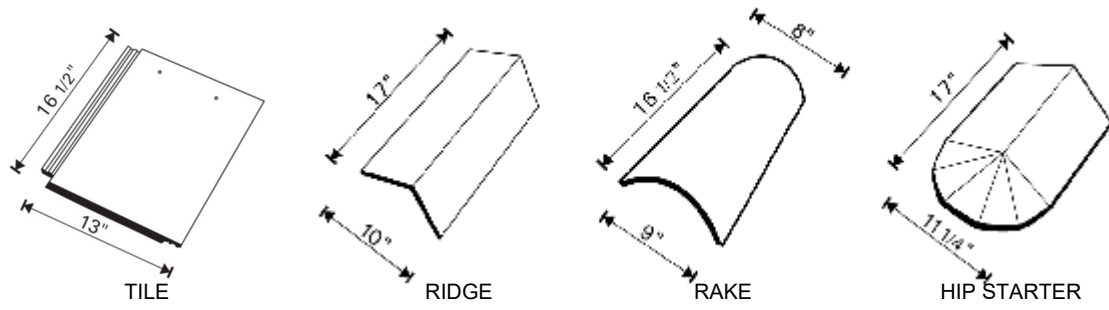
Data in accordance with the ICC-ES Acceptance Criteria for Clay and Concrete Roof Tiles (AC180), dated February 2012 (editorially revised March 2018).

7.0 IDENTIFICATION

7.1 Each Venetian tile is embossed with the words "Vortex Hydra Italy" or "CFL" or "ALLYNDEB TILE CFL." Additionally, each Flat tile is identified with the embossments "Sandstone" and "Vortex Hydra Italy." Each shipping pallet is identified with the Stoneworth Building Products name and address; the manufacturing location; the product name (Flat or Venetian); the installed weight; and the evaluation report number (ESR-2528).

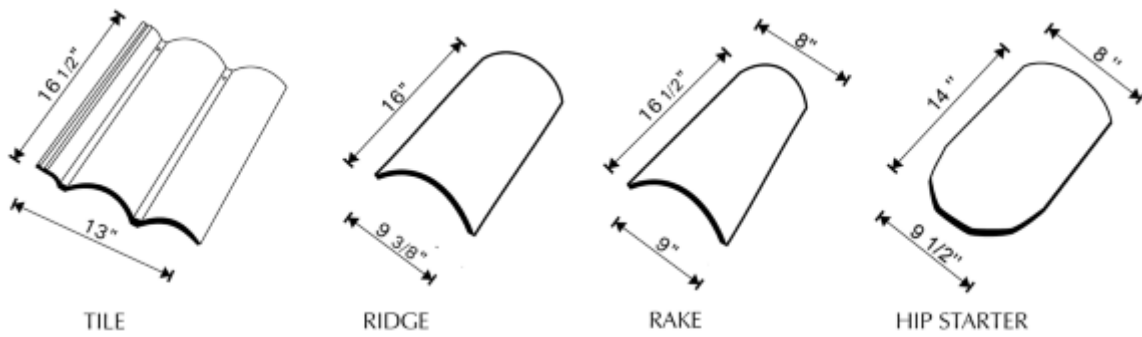
7.2 The report holder's contact information is the following:

SANDSTONE INC., dba STONEWORTH BUILDING PRODUCTS
4025 BONNER INDUSTRIAL DRIVE
SHAWNEE, KANSAS 66226
(913) 422-0794
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For SI: 1 inch = 25.4 mm.

FIGURE 1—FLAT TILE WITH RIDGE, RAKE AND HIP UNITS



For SI: 1 inch = 25.4 mm.

FIGURE 2—VENETIAN TILE WITH RIDGE, RAKE AND HIP UNITS

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SANDSTONE INC., dba STONEMORTH BUILDING PRODUCTS

EVALUATION SUBJECT:

STONEMORTH BUILDING PRODUCTS FLAT AND VENETIAN CONCRETE ROOF TILES

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that Flat and Venetian concrete roof tiles, described in ICC-ES evaluation report ESR-2528, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Flat and Venetian concrete roof tiles, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-2528, complies with the 2020 *Florida Building Code—Building* or *Florida Building Code—Residential*. The design requirements shall be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-2528 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Flat and Venetian concrete roof tiles for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued April 2022 and revised July 2022.